



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII

999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

MAY 14 1990

Ref: 8HWM-FF

Mr. Robert M. Nelson, Jr., Manager
Department of Energy
Rocky Flats Office
P.O. Box 928
Golden, CO 80402-0928

RE: Final Phase II RFI/RIFS
Workplan (alluvial) for OU 2

Dear Mr. Nelson:

This letter serves as notice from EPA of conditional approval of the final Phase II RFI/RIFS Workplan for Operable Unit 2 (OU2). This approval is required, prior to initiation of work, in accordance with the proposed Interagency Agreement (IAG) between EPA, the State of Colorado and DOE.

This approval is conditional upon DOE incorporating the enclosed comments into the work to be performed to characterize OU 2 and addressing the enclosed comments in the draft Phase II RFI/RI Report for OU 2 to the satisfaction of EPA. This conditional approval is also contingent upon EPA review and comment on the site-wide Health and Safety Plan and review and approval of the Sampling and Analysis Plan required under the IAG.

It is important to note that although most of these comments concern editorial issues, substantive requirements are also presented within the enclosed comments. Of significant importance within the comments are concerns regarding the new National Contingency Plan's (NCP) affect on the proposed ARAR analysis presented within the final Phase II RFI/RIFS Workplan for OU 2. This concern impacts all RFI/RI work at all OUs for Rocky Flats and should be taken into consideration while developing workplans and performing the work.

Also of importance are concerns regarding approval of a workplan which references the Sampling and Analysis Plan, required under the IAG, which has not yet been submitted for review and approval. This concern is addressed by the conditions raised in the second paragraph above.

As a specific matter, EPA is very concerned that the Workplan for OU 2 does not address minimization of contaminant migration due to field activities. Since the site-wide Health and Safety Plan and the Plan for Prevention of Contaminant Dispersion, required by the proposed IAG, are not yet submitted for review and comment, activities related to the Workplan for OU

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2, all related field activity, and activity related to other OU investigations must take this concern into consideration. RFI/RI reports must describe how this concern was addressed. This concern is also addressed by the conditions raised in the second paragraph above.

If EPA can be of further assistance in clarifying these matters, please contact Nat Miullo or Martin Hestmark of my staff at (303) 294-1134 and (303) 294-1132, respectively.

Sincerely,



Robert L. Duprey, Director
Hazardous Waste Management Division

Enclosure

cc (w/enclosure):

David C. Shelton, CDH
Joan Sowinski, CDH
Gary Baughman, CDH
Nat Miullo, 8HWM-FF
Peter Ornstein, 8ORC
Tom Greengard, EG&G
Scott Grace, DOE
Tom Olsen, DOE
Terri Ruiter, PRC

Comments on 903 Pad, Mound and East Trenches Areas
Final Phase II RFI/FS Workplan

Executive Summary. The bedrock RFI/FS workplan for OU 2 will be titled Phase II RFI/RI Workplan (bedrock), not Phase III.

Plutonium and americium are also observed in seeps downgradient of the 903 Pad and in the upper reaches of South Walnut Creek. This must be evaluated and discussed within the draft Phase II RFI/RI Report.

Section 1 0. The bedrock workplan is also a Phase II Workplan. It is not a Phase III Workplan.

Section 1.4.1 1. The location of the burial grounds for the drums containing plutonium contaminated sludge is important to determine as a part of this RFI/RI. 4.54×10^{-3} gm/l plutonium does not correlate to 280 pico Ci/l plutonium.

Section 1.4 1.2. The off-site disposal location of the plutonium contaminated soils removed from the 903 Lip Site must be determined as part of this RFI/RI.

Section 1.4.1 4. It is important to know what is meant by destruction of lithium, calcium, magnesium and solvents at site 140 so that the RFI/RI can incorporate this information in characterizing the site. Implementation of the workplan must address this issue.

Section 1.4.2 1. It is important to ascertain the condition of the drums when the drums were removed from the Mound Site. The RFI/RI must determine if the surficial radionuclide contamination of soil is the result of wind dispersion of contaminants from the 903 Pad Site.

Section 1.4.2 2. It is important to determine the offsite disposal location of the two drums unearthed in 1968 from this site. This information must be presented within the draft Phase II RFI/RI for OU 2.

Section 2 2.2 2. Implementation of the final workplan must reflect information gathered as a result of the seismic study ongoing

Section 2 3.1. Table 2-4 within this section should have been revised to reflect the actual number of samples utilized to calculate tolerance intervals. This information must be updated in the draft Phase II RFI/RI Report for OU 2.

Section 2 3 2 1. The draft Phase II RFI/RI Report must be based on use of appropriate analytical procedures. Procedures should have been identified within the workplan which would

allow information derived from the phase I investigation to be verified or refuted. The phase I investigation seems to have relied upon medium level CLP procedures utilizing inappropriate detection limits for volatile organic compounds. The final workplan should have referenced the data validation of the phase I data. The draft Phase II RFI/RI Report must reference this information and the RFI/RI work must incorporate and utilize appropriate analytical procedures.

The final Phase II RFI/RI Workplan for OU 2 should have identified that acetone, 2-butanone, chloroform, 4-methyl-2-pentanone, toluene, ethylbenzene and xylenes appear to be present at trench T-2. The final workplan should not have excluded the possibility of the presence of methylene chloride, trans-1,2-dichloroethene, chloroform, trichloroethene, phthalates, and cis-1,3-dichloropropene from the 903 Pad area. This information cannot be excluded from the draft Phase II RFI/RI Report.

Section 2.3.2.2. The Oil Burn Pit No. 2 is SWMU No. 153, not SWMU No. 158.

The final Phase II RFI/RI Workplan for OU 2 should have clarified which existing and proposed boreholes will be used to characterize each SWMU, and the numbers and types of soil samples to be collected at each borehole. This information must be included within the draft Phase II RFI/RI Report for OU 2.

Conclusions regarding the presence of plutonium and americium as a result of the wind dispersion of material from the 903 Pad are not acceptable and cannot be substantiated with the present information. The draft RFI/RI Report must substantiate or refute this theory.

Section 2.3.2.3. The draft Phase II RFI/RI Report must be based on use of appropriate analytical procedures. Procedures should have been identified within the workplan which would allow information derived from the phase I investigation to be verified or refuted. The phase I investigation seems to have relied upon medium level CLP procedures utilizing inappropriate detection limits for volatile organic compounds. The final workplan should have referenced the data validation of the phase I data. The draft Phase II RFI/RI Report must reference this information and the RFI/RI work must incorporate and utilize appropriate analytical procedures

In order to verify that the plutonium and americium contamination of the soil is limited to the surface, the subsurface soils must also be sampled and analyzed for

radionuclides (see comment on section 5.2.3. below).

The final workplan should have indicated that phthalates and 2-butanone were above detection limit within samples from boreholes at trenches T-3, T-4, T-10 and T-11. The final workplan should have indicated that 1,1,1-trichloroethane, toluene, and xylenes appear to be present within boreholes drilled within trenches T-5 through T-9. The draft Phase II RFI/RI Report must reflect this.

Section 2.3.3. This section should have clarified how first quarter 1989 site specific well data is compared to second quarter background information. Also, this section should have explained why maximum detected values were utilized instead of upper tolerance limit values, when available. The draft Phase II RFI/RI Report for OU 2 must provide this explanation.

This section should have discussed the designations of the flagged analytical results as they pertain to results estimated above/below detection limits so as to clarify the interpretation of results. The draft Phase II RFI/RI Report must include this explanation. Table 2-9 must be updated in the draft RFI/RI Report to reflect excluded ground water data referenced within EPA comments on the draft phase II RFI/RI Workplan, section 2.3 3.1.

Section 2.3.3.2. Why are second quarter 1989 well analytical results compared to maximum detected values instead of calculated tolerance intervals for ground water radionuclide data in table 2-10? Table 2-11 should have been clarified to note that the background figures presented for comparison to all previously collected data may not represent background for quarters other than the second quarter of 1989. Thus this serves as a qualitative comparison only. The data presented within table 2-11 for radionuclides in ground water should be compared to the 1989 second quarter tolerance interval, not the maximum detected level for the second quarter of 1989, even though this tolerance interval is not directly applicable to all data previously collected and is only a qualitative indicator for data collected previous to the second quarter 1989. These explanations must be presented within the draft RFI/RI Report for OU 2

The work implemented to support the draft Phase II RFI/RI for OU 2 must substantiate or refute the evaporative concentration theory substantiate or refute the transport of contaminants by the south interceptor ditch.

Section 2.3.5.2. Data and sampling locations for samples taken in October, 1989 must be presented within the draft Phase II RFI/RI Report for OU 2.

Section 2.4. This section should have been titled Chemical Specific Applicable or Relevant and Appropriate Requirements. The following comments on the ARAR analysis are intended, in part, to conform the ARAR analysis to specific requirements of the revised NCP and will require the reformulation of table 2-12, potential chemical specific ARAR concentrations when presented within the draft Phase II RFI/RI Report for OU 2.

- The ARAR screening process should not be performed serially. Rather, relevant and appropriate requirements are considered in the same manner as applicable requirements. When more than one ARAR is identified, the most stringent ARAR is to be used.

- Pursuant to the NCP (40 CFR 300.430(e)(2)(1)(B)), MCLGs must be attained for remedial actions for ground or surface waters that are current or potential sources of drinking water. Where the MCLG is set at a level of zero, the MCL must be attained.

- Pursuant to the NCP (40 CFR 300.430(e)(2)(1)(E)), Water Quality Criteria must be attained where relevant and appropriate.

- Pursuant to the NCP (40 CFR 300.430(e)(2)(1)(A)(2)), the 10E-6 risk level is to be used for carcinogens which do not have an ARAR. In particular, this should be evaluated for strontium. In addition, in evaluating the potential alternatives, all ARARs taken together should not present a cumulative risk in excess of 10E-4. If such risk would be exceeded for a particular alternative, the ARARs may need to be scaled back accordingly (see also 40 CFR 300.430(e)(2)(1)(D)).

- RCRA LDR is an action specific ARAR, triggered by the placement of a restricted waste. For the purposes of identifying chemical specific ARARs prior to screening remedies, the RCRA LDR standards in Subpart D of 40 CFR part 268 should be classified as "items to be considered"

The newly promulgated applicable CDH surface water standard for trihalomethanes is 190 ppb. The newly promulgated applicable CDH surface water standard for 1,1,2,2-tetrachloroethane is 170 parts per trillion. Although contaminant concentrations in ground water were estimated below detection limits, ARARs analyses must be presented for methylene chloride, acetone, carbon disulfide, 1,2-dichloroethene and toluene. Potential ARARs for phthalates and PCBs must also be presented. This information must be revised within the draft RFI/RI Report for OU 2

Section 3.1. Concerning the table 3-1 objective of characterizing the nature and extent of contamination, DOE must also include evaluation of the horizontal and vertical extent of inorganic and organic contamination in soils external to SWMUs. This addition must be carried forward through sections 4.0. and 5.0. of the workplan and must be implemented and the resulting information presented within the draft Phase II RFI/RI Report for OU 2. The characterization of sources must be completed regardless of the past removal of wastes from some of the sites. This information must be provided within the draft Phase II RFI/RI Report for OU 2

Section 3.2. Table 3-2 must be modified to reflect the new NCP modification of the ARARs analysis presented in section 2.4 and the update of the CDH standards for trihalomethanes and 1,1,2,2-tetrachloroethane as indicated in comments pertaining to section 2.4. above.

The final workplan should have identified workplan items designed to provide information not present in the Phase I RI. These shortcomings must be identified, corrected and presented within the draft Phase II RFI/RI Report for OU 2.

Section 4.1.3. The brief description of the activities required for the remedial investigation do not correlate to the objectives presented within section 3.2. of the workplan. For example, not just the surface soils will be sampled and analyzed for radionuclide contamination.

Section 4.1.6. For clarity, this section should have further stated that the risk assessment will assume no institutional controls. The risk assessment to be presented within the draft Phase II RFI/RI Report for OU 2 must reflect this requirement.

Section 4.1.6.2. This section describes work which may be required to evaluate environmental impact associated with the disposal practices at OU 2. Data needs and actual workplan objectives are not described or defined within section 3.0 of the workplan. The draft RFI/RI must present this information and a detailed description of the methods utilized to realize these data needs.

Section 4.2.2.1. The compliance with ARARs section should have been reworded to state "The analysis will address compliance with chemical specific, location specific and action specific ARARs in accordance with the NCP. If an alternative will not comply with an ARAR, the FS report will propose a basis for justifying a waiver, if appropriate." The draft Phase II RFI/RI Report must be prepared to reflect

this change.

Section 4.2.3. The progression of Feasibility Study documents is draft to final. Under the proposed IAG, there is no provision for the Feasibility Study to go to public comment. The Proposed Plan goes to public comment.

Section 5.0. DOE must present rationale for not analyzing both filtered and unfiltered samples for metal constituents.

Section 5.1.1. It is unclear how table 5-1 correlates with statements made in this section concerning well screened interval. The well screened interval tables should have followed the procedures outlined within this section.

An alluvial monitoring well must be located approximately 150 feet south southeast of newly proposed well 85-90. New well 35-90 must be relocated approximately 50 feet west of proposed location.

Section 5.1.1.3. DOE must not reduce the parameter list for analysis of ground water samples prior to receiving approval from the regulatory agencies.

Section 5.2.1.2. Boreholes must be located immediately downgradient of sites 153 and 154. These boreholes must be located as close to the source sites as is allowed. Boreholes must be located on both sides of site 108 in addition to the proposed monitoring wells. The draft RFI/RI Report for OU 2 must include this requirement. A borehole must be placed to characterize the potential for a source to be located within site 183.

Section 5.2.1.3. Boreholes must be placed external to, and downgradient from sites within the East Trenches Areas. This is necessary in order to verify the results of the phase I investigation. These boreholes must be sampled for all constituents listed within table 5-5. If trench T-10 is filled with barrels, boreholes must be drilled adjacent to this site and figure 1-5 should have been modified to reflect this information. Boreholes and wells must be completed and sampled in surface water drainages downgradient of the east spray fields to evaluate the effect the east spray fields have had on these drainages. The draft Phase II RFI/RI Report must include information derived from inclusion of these boreholes

Section 5.2.3. Given that stored and buried drums contained plutonium and uranium, the soils must be sampled for plutonium 239 and 240, americium 241 and uranium 233/234, 235 and 238. Also, if the one meter depth proposed for the vertical profile indicates that radionuclides are found at

depth, further characterization may be warranted. It would be prudent to sample small discreet intervals within proposed boreholes drilled into and adjacent to sites known to have contained radionuclides to verify the premise that 903 Pad is responsible for the radionuclides present in the soils affected by OU 2. This is necessary as some borehole samples taken at depth do indicate the presence of plutonium and americium.